



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,119	07/31/2003	Annette J. Krisko	44046.203.268.1	1841

22859 7590 10/05/2005

INTELLECTUAL PROPERTY GROUP
FREDRIKSON & BYRON, P.A.
200 SOUTH SIXTH STREET
SUITE 4000
MINNEAPOLIS, MN 55402

EXAMINER

BLACKWELL RUDASIL, GWENDOLYN A

ART UNIT	PAPER NUMBER
----------	--------------

1775

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/632,119

Applicant(s)

KRISKO ET AL.

Examiner

Gwendolyn Blackwell

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) 35-49 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/03, 1/04, 5/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-34 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3, 10-11, 14, 16-23, and 26-32 of copending Application No. 10/438,283. Although the conflicting claims are not identical, they are not patentably distinct from each other because the structure set forth in presently pending claims 1-34 are completely encompassed by the structure of copending claims 1-32. Both sets of structures require at least a four-layer structure comprised of a first infrared reflective film, a first high absorption layer comprised of at least niobium, a second infrared reflective film and a second high absorption layer comprised of at least niobium. The thickness of the individual layers also overlap.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Art Unit: 1775

3. Claims 1-34 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-63 of copending Application No. 10/123,032. Although the conflicting claims are not identical, they are not patentably distinct from each other because the structure set forth in presently pending claims 1-34 are completely encompassed by the structure of copending claims 1-63. Both sets of structures require at least a four-layer structure comprised of a first infrared reflective film, a first high absorption layer comprised of at least niobium, a second infrared reflective film and a second high absorption layer comprised of at least niobium. The thickness of the individual layers also overlap.

4. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Election/Restrictions

5. Applicant's election with traverse of Group I in the reply filed on September 9, 2005 is acknowledged. The traversal is on the ground(s) that no serious burden would be placed upon the Examiner by examining the claims of Group I and II concurrently as each relate to a transparent substrate bearing a tempered high shading performance low-e coating. This is not found persuasive because both inventions are not drawn to low-e coating on a transparent substrate. Only the article claims include that the substrate is transparent. The method claims set forth in Group II place no limitations on the transparency of the substrate to be coated.

In addition, MPEP § 808.02 recites that for the purposes of the initial requirement of a restriction, a serious burden on the examiner may be prima facie shown if the examiner shows by

Art Unit: 1775

appropriate explanation either separate classification, separate status in the art, or a different field of search as defined in MPEP § 808.02. Since the Examiner has shown a different classification for the two groups of claims, a burden for examining both groups has been shown.

The requirement is still deemed proper and is therefore made FINAL.

6. If the product claims are subsequently found allowable, withdrawn process claims, which depend from or otherwise include all the limitations of the allowable product claim will be considered for rejoinder. *MPEP 821.04.*

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1-34 are rejected under 35 U.S.C. 102(e) as being anticipated United States Patent Application Publication no. 2003/0165694, Hartig et al.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the

Art Unit: 1775

inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claims 1-2, 16-22, and 26-31

Hartig et al disclose a thin film comprised of a niobium-titanium film formed on a substrate. The multilayered thin film formed on the substrate, which can be a coated glass pane, an insulting glass unit, or an assembled window, is comprised of a first infrared reflective layer, a protective (high absorption blocker) layer comprised of niobium-titanium, a second infrared layer and a second protective (high absorption blocker) layer comprised of niobium-titanium wherein the thicknesses of each of the protective layers ranges from about 10Å to about 30 Å, (page 2, sections 0012-0013). In addition to the aforementioned layers, a middle coat and an outer coat are added to the layer structure wherein both middle and outer coats are comprised of nitride films, (page 9, section 0080 and page 11, section 0095), meeting the requirements of claims 1-2.

Hartig et al disclose that the thin film can be used with an insulated glass unit. It is well known in the art that insulated glass units are formed of two glass sheets in a spaced apart configuration with the low emissivity coating formed on one of the inner surfaces (as demonstrated in US 2004/0016202). When the structure recited in the reference is substantially identical to that of the claims, the claimed properties or function are presumed inherent. *MPEP 2112.01*. Because the prior art exemplifies Applicant's claims thin film structure, the claimed physical properties relating to the total visible light transmittance, solar heat gain coefficient, emissivity, exterior visible reflectance, and a_h and b_h color coordinates are inherently present in the prior art. Absent an objective showing to the contrary, the addition of the claimed physical

Art Unit: 1775

properties to the claim language fails to provide patentable distinction over the prior art, meeting the requirements of claims 16-22 and 26-31.

Regarding claim 3

The first and second infrared reflective films can have a combined thickness of 145-340Å, (page 11, section 0091), meeting the requirements of claim 3.

Regarding claims 4-9

The silicon nitride film of the middle coat has a combined layer thickness of about 400-1200Å, (page 9, section 0080), meeting the requirements of claims 4-5. The middle coat can be comprised of more than one layer wherein the first layer is silicon nitride and the second layer is zinc oxide, (page 9, section 0082), meeting the requirements of claim 6. In addition the middle coat layer can be comprised of alternating silicon nitride and zinc oxide layers, (page 9, sections 0083-0084), meeting the requirements of claims 7-8. The second infrared layer is formed over the middle coat layers, (page 9-10, sections 0084 and 0088), meeting the requirements of claim 9.

Regarding claims 10-13

The outer coat is comprised of a one or more layers formed on the second high absorption layer can have the layer structure: silicon nitride/titanium nitride/silicon nitride, (page 11, section 0096), meeting the requirements of claims 10 and 12. The silicon nitride next to the second high absorption layer has thickness of 22-55Å and the titanium nitride layer has a thickness of 4-41 Å, (page 11, section 0096), meeting the requirements of claims 11 and 13.

Art Unit: 1775

Regarding claims 14-15

Between the substrate and the first infrared reflective coating, an inner coat is deposited wherein the inner coat comprises at least one dielectric film and has an overall thickness of no more than about 400Å wherein the inner coat can be zinc oxide which is known in the art to have a refractive index of about 2.0, (page 8, section 0074), meeting the requirements of claims 14. Between the inner coat layer and the substrate a transparent base layer comprised of silicon dioxide is formed, (page 8, section 0070), meeting the requirements of claim 15.

Regarding claims 23 and 32

The multilayered thin film formed on the substrate, which can an insulting glass unit, and having the layer structure set forth above, (page 2, sections 0012-0013), has a combined thickness of 145-340Å, (page 11, section 0091), meeting the requirements of claims 23 and 32.

Regarding claims 24 and 33

From the layer structure set forth above, the total thin film can have a layer structure as follows, (meeting the requirements of claims 24 and 33):

silicon dioxide layer/inner coat/first infrared reflective layer/first high absorption blocker layer/middle coat/second infrared reflective layer/second high absorption blocker layer/outer coat.

The inner coat has a total optical thickness of no more than about 450 Å, (page 9, section 0075), a middle coat thickness of 400-1200 Å, (page 9, section 0081), and an outer coat having a thickness of at least one or more dielectric layers wherein each layer has a physical thickness of no more than about 250Å or about 450 Å, (page 11, section 0094), meeting the requirements of claims 25 and 34.

Art Unit: 1775

10. Claims 1-3, 10-11, 14, 16-23, and 26-32 are rejected under 35 U.S.C. 102(e) as being anticipated United States Patent Application Publication no. 2004/0016202, Hoffman.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claims 1-3, 17-18, 23, 26-27, and 32

Hoffman et al disclose a transparent substrate with a low emissivity coating formed thereon wherein the coating is comprised of a first infrared reflective film, a first high absorption blocker layer comprising niobium, a middle coat, a second infrared reflective film, a second high absorption blocker layer comprising niobium, and an outer coat, wherein the first and second high absorption blocker layer have a combined thickness of between 72-110 Å and the first and second infrared reflective layers have a combined thickness of between about 209-293 Å (pages 1, section 0008), meeting the requirements of claims 1-3.

Hoffman et al also disclose a insulating glass unit having the layer structure set forth above on an inner surface of one of two glass panes which are held in a spaced apart configuration wherein the total visible transmittance is between about 0.36 - about 0.44 with a solar heat gain coefficient of less than about 0.3, (page 2, sections 0009-0010), meeting the requirements of claims 17-18, 23, 26-27, and 32.

Regarding claims 10-11

Art Unit: 1775

Silicon nitride can be deposited over the first high absorption blocker layer, (page 8, sections 0058-0059), meeting the requirements of claim 10. The silicon nitride layer has a thickness of about 50Å, (page 8, section 0059), meeting the requirements of claim 11.

Regarding claims 14, 16, 19, and 28

Between the first infrared reflective layer and the substrate an inner coat wherein the inner coat is comprised of a transparent dielectric having a refractive index of between about 1.7 and about 2.4, (page 7, section 0055), meeting the requirements of claim 14. The coated substrate has an emissivity of about 0.056, (page 5, section 0040), meeting the requirements of claims 16, 19, and 28.

Regarding claims 20-22 and 29-31

The insulating glass unit has an exterior visible reflectance of about 14%, (page 4, section 0036), meeting the requirements of claims 20-21 and 29-30. The insulating glass unit also has color coordinates a_h and b_h having the values of between -0.75 - -3.25 and -2.25 - -4.75, respectively, (page 5, section 0039), meeting the requirements of claims 22 and 31.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gwendolyn Blackwell whose telephone number is (571) 272-1533. The examiner can normally be reached on Monday - Thursday, 5:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1775

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gwendolyn Blackwell
Examiner
Art Unit 1775

gab
gab

JM
JENNIFER MCNEIL
PRIMARY EXAMINER

10/03/05